PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE d to a collection of information unless it contains a valid OMR control number

Substitute	for form 1449A/PTC)			Complete if Known	
				Application Number		
INFO	RMATION	DIS	CLOSURE	Filing Date	September 30, 2003	
STAT	TEMENT B	Y A	PPLICANT	First Named Inventor	Lester F. Ludwig	
				Group Art Unit		
	(use as many she	ets as	necessary)	Examiner Name		
Sheet	1	of	13	Attorney Docket Number	2738-21	

			U.S. PATENT	OCUMENTS	
Examiner Initials	Cite No.	Document Number Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
HD	A1	US-1,947,020	02-13-1934	Ranger	
	A2	US-3,493,669	02-03-1970	Elbrecht et al.	
	A3	US-3,591,699	07-06-1971	Cutter	
	A4	US-3,612,741	10-12-1971	Marshall	_
	A5	US-3,651,242	03-21-1972	Evans	
	A6	US-3,730,046	05-01-1973	Spence	
	A7	US-3,742,133	06-26-1973	Cohen	
	A8	US-3,805,091	04-16-1974	Colin	
	A9	US-3,813,473	05-28-1974	Terymenko	
	A10	US-3,878,748	04-22-1975	Spence	
	A11	US-3,956,959	05-18-1976	Ebihara et al.	
	A12	US-3,962,945	06-15-1976	Creager et al.	
	A13	US-4,075,921	02-28-1978	Heet	1
	A14	US-4,080,867	03-28-1978	Ratanangsu	
	· A15	US-4,117,413	09-26-1978	Moog	
	A16	US-4,122,742	10/31/1978	Deutsch	
	A17	US-4,151,368	04-24-1979	Fricke et al.	
1	A18	US-4,182,213	01-08-1980	lodice	
V	A19	US-4,274,321	06-23-1981	Swartz	
MAS	A20	- US-4,318,327	- 03-09-1982	Toups	

FOREIGN PATENT DOCUMENTS											
	014-	Foreign Patent Document		Name of Patentee or	Pages, Columns, Lines,						
Examiner Initials*	Cite No. ¹	Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	T [©]					
Aus	B1	EP-0 574 213-A1	12-15-1993	Synaptics, Inc.							
4											
		<u> </u>									
			ļ <u></u>								
		<u> </u>	1		<u> </u>						

Examiner Signature	In St	Date Considered	10/2	7/04	
		 			_

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional) . ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
³ Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

	Substitute	for form 1449A/P			Complete If Known			
					· Application Number			
	INFO	RMATION	N DIS	CLOSURE	Filing Date	September 30, 2003		
	STAT	EMENT E	BY A	PPLICANT	First Named Inventor	Lester F. Ludwig		
	• . ,				Group Art Unit			
		(use as many si	heets as	necessary)	Examiner Name			
Ī	Sheet	2	of	13	Attorney Docket Number	2738-21		

			U.S. PATENT	OCUMENTS		
Examiner	Cite	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant	
Initials *	No.1	Number - Kind Code ² (if known)	MM-DD-YYYY		Passages or Relevant Figures Appear	
NHD)	A21	US-4,365,533	12-28-1982	Clark, Jr. et al.		
1	A22	US-4,781,099	11-01-1988	Koike		
	A23	US-4,794,838	01-03-1989	Corrigau, III		
	A24	US-4,797,608	01-10-1989	White		
	A25	US-4,852,444	08-01-1989	Hoover et al.		
	A26	US-4,991,488	02-12-1991	Fala et al.		
	A27	US-5,033,352	06-23-1991	Kellogg et al.		
	A28	US-5,045,687	09-03-1991	Gurner		
	A29	US-5,070,399	12-03-1991	Martel		
1	A30	US-5,146,833	09-15-1992	Lui		
	A31	US-5,159,140	10-27-1992	Kimpara et al.		
	A32	US-5,218,160	06-08-1993	Grob-Da Veiga		
	A33	US-5,233,123	08-03-1993	Rose et al.		
	A34	US-5,262,585	11-16-1993	Greene et al.		
	A35	US-5,281,754	01-25-1994	Farrett et al.		
	A36	US-5,292,999	03-08-1994	Tumura		
17	A37	US-5,357,048	10-18-1994	Sgroi		
1/	A38	US-5,378,850	01-03-1995	Tumura		
V	A39	US-5,440,072	08-08-1995	Willis		
mili	A40	US-5,442,168	08-15-1995	Gurner et al.		

FOREIGN PATENT DOCUMENTS										
		Foreign Patent Document		Name of Patentee or	Pages, Columns, Lines, Where Relevant	τ [¢]				
Examiner Initials*		Country Code ³ - Number ⁴ - Kind Code ⁵ (if , known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Passages or Relevant Figures Appear					
				 						
				 						
	l		· ·							
		1								

Examiner Signature Date Considered 10/21/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Fraw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08A (10-01)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitut	te for form 1449A/PTO			Complete if Known				
				Application Number				
INFO	DRMATION I	DIS	CLOSURE	Filing Date	September 30, 2003			
STA	TEMENT BY	/ A	PPLICANT	First Named Inventor	Lester F. Ludwig			
				Group Art Unit				
	(use as many shee	ets as	necessary)	Examiner Name				
Sheet	3	of	13	Attorney Docket Number	2738-21			

			U.S. PATENT	OCUMENTS	
Examiner	Cite	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant
Initials	, ek	Number - Kind Code ² (if known)	MM-OD-YYYY		Passages or Relevant Figures Appear
H	A41	US-5,459,282	10-17-1995	Willis	
77,	A42	US-5,471,008	11-28-1995	Fujita et al.	
	A43	US-5,475,214	12-12-1995	DeFranco et al.	
	A44	US-5,565,641	10-15-1996	Gruenbaum	
	A45	US-5,585,588	12-17-1996	Tumura	
	A46	US-5,659,145	08-19-1997	Weil	
	A47	US-5,659,466	08-19-1997	Norris et al.	
	A48	US-5,665,927	09-09-1997	Taki et al.	
	A49	US-5,668,338	09-16-1997	Hewitt et al.	
	A50	US-5,875,100	10-07-1997	Hewlett	
	A51	US-5,741,993	04-21-1998	Kushimiya	
	A52	US-5,763,806	06-09-1998	Willis	
	A53	US-5,786,540	06-28-1998	Westlund	
	A54	US-5,827,989	10-27-1998	Fay et al.	
	A55	US-5,850,051	12-15-1998	Machover et al.	
	A56	US-5,852,251	12-22-1998	Su et al.	
	A57	US-5,932,827	08-03-1999	Osborne et al.	
1	A58	US-5,969,283	10-19-1999	Looney et al.	
	A59	US-6,047,073	04-04-2000	Norris et al.	
JULI	A60	US-6,051,769	04-18-2000	Brown, Jr.	

	FOREIGN PATENT DOCUMENTS								
		Foreign Patent Document		Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear				
Examiner Initials*		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document		T⁵			
				 					
			<u> </u>						

Examiner Signature	Mark	All	The second	Date Considered	16/27/04	
	77//					

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique/citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Skind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031 U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

	Substitute	e for form 1449			Complete if Known			
					Application Number			
	INFO	RMATI	ON DI	SCLOSURE	Filing Date	September 30, 2003		
	STA	TEMEN'	T BY	PPLICANT	First Named Inventor	Lester F. Ludwig		
	•				Group Art Unit			
		(use as man	y sheets	as necessary)	Examiner Name			
$\bar{}$	Sheet	4	01	13	Attorney Docket Number	2738-21		

			U.S. PATENT D	OCUMENTS	
Examiner Initials	Cite No.1	Document Number Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
SHILL	A61	US-6,100,461	08-08-2000	Hewitt	r igaros repoda
7/4	A62	US-6,140,565	10-31-2000	Yamauchi et al.	
	A63	US-6,204,441 B1	03-20-2001	Asahi et al.	
	A64	US-6,288,317 B1	09-11-2001	Willis	
	A65	US-6,310,279 B1	10-30-2001	Suzuki et al. 🔍	
$\neg -$	A66	US-6,320,112 B1	11-20-2001	Lotze	
1/	A67	US-6,360,019 B1	03-19-2002	Chaddha	
V	A68	US-6,363,159 B1	03-26-2002	Rhoads	
/11	A69	US-6,392,705 B1	05-21-2002	Chaddha	
MAH	A70	US,6,404,898 B1	06-11-2002	Rhoads	
7					

	FOREIGN PATENT DOCUMENTS							
		Foreign Patent Document		Name of Patentee or	Pages, Columns, Lines,			
Examiner Cite No.1	Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	Τ ⁶			

Examiner Signature Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Substit	ute for form 1449	A/PTO		Complete if Known		
				Application Number		
			CLOSURE	Filing Date	September 30, 2003	
STA	ATEMEN'	T BY A	PPLICANT	First Named Inventor	Lester F. Ludwig	
				Group Art Unit		
	(use as mai	ny sheets as	necessary)	Examiner Name		
Sheet	5	of	13	Attorney Docket Number	2738-21	

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
Aff	C1	"Biax True Stereo Pickups," product description, Musician's Friend catalog.	
	C2	"Korg's New Z-1 Helps Fiddler Keep His Funk", Music and Sound Retailer, Mar. 1998.	
	СЗ	"Synaptics Targets Vision, Sound processing."	
	C4	"Yamaha VL1", advertisement, Electronic Musician, Apr. 1994.	
	C5	APPELMAN, D. RALPH, The Science of Vocal Pedagogy, Theory and Applications, 1967, Indiana University Press, Bloomington, Indiana, USA.	
	C6	Biaxe Ragamaster, Box 15426, Stamford, CT, 06901-0426, USA.	
	C 7	BICANIC, DANE, ed. Photoacoustic and Photothermal Phenomena III. 1992, vol. 69, Springer-Verlag, Berlin Heidelberg, Germany.	
	C8	BORMANS, JAN "MPEG-4 systems need specialized CPUs", Electronic Engineering Times, Jan. 25, 1999.	
	C9	Boss DF-2, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	
V	C10	Boss OC-2 Service Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles 90040-3696, CA, USA.	
Alf	C11	Boss SE-70 Super Effects Processor Algorithm Guide, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	

Examiner Signature	Market Delsten	Considered	10/2/04	
EXAMINER: Initiand not consider	tial if reference considered, whether or not citation is in confered, include copy of this form with next communication to ap	ormance with MPEP (plicant.	509. Draw line through citation i	f not in conformance



¹ Unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Substitute f	or form 1449A/PTC)		Complete if Known		
		DIO	OL OCUPE	Application Number		
			CLOSURE	Filing Date	September 30, 2003	
STATEMENT BY APPLICANT				First Named Inventor	Lester F. Ludwig	
				Group Art Unit		
(use as many sheets as necessary)			necessary)	Examiner Name		
Sheet	6	of	13	Attorney Docket Number	2738-21	

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS		
Examiner Cite		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Т2	
	C12	Boss SE-70 Super Effects Processor Owners Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.		
	C13	CP-40 Pitch to Midi Converter, Roland, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.		
	C14	DMP9-16 Digital Mixing Processor, Yahama Corporation, PO Box 1, Hamatsu, Japan.		
	C15	DP/4, Ensoniq, 155 Great Valley Parkway, Malvern, PA 19355, USA.		
	C16	E-Bow, Heet Sound Products. PO Box 3312, 611 Ducommun St., Los Angeles, CA 90051, USA.		
	C17	EPSTEIN, "The Search for New Chemical Oscillators," in Chemical Instabilities, Nicolis and Baras (eds.), 1984, D.Reidel Publishing, Dordrecht/Boston/Lancaster.		
	C18	EPSTEIN, IRVING R, "New Chemical Oscillators", Non-Equilibrium in Chemical Systems, 1984, Springer-Verlag, Berlin/Heidelberg, Germany.		
	C19	Ernie Ball, Volume Pedal, Musician's Friend Catalog.		
	C20	Etc., PETER, Letter to Editor, Experimental Musical Instruments, Jun., 1996.		
	C21	EWI3020, AKAI Corporation, Box 2344 Fort Worth, TX 76113, USA.		
MIS	C22	FIELD, RICHARD J., and NOYES, RICHARD M. "Oscillations in Chemical Systems IV Limit Cycle Behavior in a Model of a Real Chemical Reaction," J. Chem. Physics, Vol. 60, No. 5.Mar. 1974.		

miner lature	Marla	Ale	The state of the s	Date Considered	18/	27/04	
	, , , , , , , , , , , , , , , , , , , 	$\overline{}$.,		$\overline{}$, , 	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered, include copy of this form with next communication to applicant.



¹ Unique citation désignation number (optional). 2 Applicant is to place a check mark here if English anguage Translation is attached.

Substitute for form 1449A/PTO				Complete if Known			
13.15.0	DILATIO	N DIO	01 001105	Application Number			
			CLOSURE	Filing Date	S ptember 30, 2003		
STA	TEMENT	BY A	PPLICANT	First Named Inventor	Lester F. Ludwig		
				Group Art Unit			
	(use as many :	sheets as	necessary)	Examiner Name			
Sheet	7	of	13	Attorney Docket Number	2738-21		

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	-
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
All	C23	GI-10 Guitar-Midi Interface, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	
	C24	GRAY,PETER, and SCOTT,STEPHEN K, "Chemical Oscillations and Instabilities," 1990, Clarendon Press, Oxford, Great Britain.	
	C25	GSP 21 LEGEND, Digitech, 8760 South Sandy Parkway, Sandy, UT 84070, USA.	
	C26	GZOWSKI, JOHN "Sirens and Sympathetics", Experimental Musical Instruments, Jun. 1997, vol. 12, No. 4.	
	C27	HARA, YOSHIKO "Matsushita demos multilayer MPEG-4 compression", Electronic Engi-neering Times, Apr. 19, 1999.	
	C28	JOHNSON, COLIN "Computer program recognizes facial expressions", Electronic Engineering Times, Apr. 12, 1999.	
	C29	JOHNSON, COLIN "Image sensor tracks moving objects in hardware", Electronic Engineering Times, Apr. 5, 1999.	
	C30	Kaoss pad dynamic effect/controller, Korg Proview Users' magazine, Summer 1999.	
1	C31	KING and WHITE, "Tactile Sensing Array Based on Forming and Detecting an Optical Image," UC Berkeley Preprint.	
J	C32	KURAMOTO, YOSHIKI, "Rhythms and Turbulence in Populations of Chemical Oscillators", Physica 106A (1981), pp. 128-143, North-Holland.	
All	C33	LEIBERMAN, DAVID "Software goes on a search-and-locate mission", Electronic Engineer-ing Times, Jan. 25, 1999, pp. 44.	

Examiner Signature	Atth	Date Considered	15/20/04	
			1977/	

EXAMINER: Initial if perence considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons	Complete if Known		
Substitute for form 1449A/PTO	Application Number		
INFORMATION DISCLOSURE	Filing Date	September 30, 2003	
STATEMENT BY APPLICANT	First Named Inventor	Lester F. Ludwig	
SIAILMENT	Group Art Unit		
(use as many sheets as necessary)	Examiner Name		
Cheek 8 of 13	Attorney Docket Number	2738-21	

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the article (when ap	Τ2
Initials *	No.	LEIBERMAN, DAVID "Touch screens extend grasp into consumer realm" Electronic Engineer-ing	
	C35	Times, Feb. 8, 1999.	
	C35	Light Wave Pickups, Audio Optics, Santa Barbara, CA., USA. LIM, AGRAWAL, and NEKLUDOVA "A Fast Algorithm for Labeling Connected Components In LIM, AGRAWAL, and NEKLUDOVA "A Fast Algorithm for Labeling Connected Components In Line (1987), NA86-2, Thinking Machines Corp., 1986 (rev. 1987),	
	C38	Image Arrays", Technical Report Series, No. 18 to 2	
	C37	Lord LTS-300T Tactile Array Sensor, Lord Corp., Ind. Aut. Div., 407 Gregson Dr., PO Box 8200, Cary, NC, 27511-8200, USA.	
	C38	LUDWIG, L., "A Generalized Linear Amplitude Processor," Electronotes, Dec. 1979, Vol. 11, No.	
	C39	LUDWIG, L., "A Square-Wave Frequency-Division Sub-Octave Cross-Product Module, "	
	-	Electronotes, Feb. 1979, Vol. 11, No. 98.	
	C40	LUDWIG, L., "GLAP Revisited," Electronotes, Jul. 1981, vol. 13, No. 127.	
	C41	LUSHER, E. (unk) "Photoacoustic effect: principles and applications: proceedings of the First International Conference on the Photoacoustics," 1984, Vieweg.	+-
	C42	MIDI Player MP-88, Miditemp, Max-Halbe-Strasse 1 85716 Unterschleissheim, Germany 0049-89-	-
	C43	MOOG, ROBERT A. "The Human Finger-A Versatile Electronic Music Instrument Component", Audio Engineering Society Preprint, 1977, New York, NY, USA.	+
MIL	C44	MS4-MS6 Solton, Ketron lab, dist. By Bell Douvox Corp. 126 Rt. 303, 10994 W. Nyack, NY, USA.	

	I wall the	Date	. 180	2d/h4
Examiner	11/1/1/1/1/778	Conside	ered /0/1	7/0/
Signature	Illa Man C fee	W		absource citation if not in conformance
in a series of the least	in it of forence considered, whether	or not citation is in conformance with	MPEP 609. Draw line	through citation if not in conformance

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered, include copy of this form with next communication to applicant.

¹ Unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Sul	ıbstitute for	form 1449A/PTO	,		Compl t if Known		
				01 001 IDE	Application Number		
• • •				CLOSURE	Filing Date	September 30, 2003	
S	TATE	MENT B	Y Al	PPLICANT	First Named Inventor	Lester F. Ludwig	
					Group Art Unit		
	(us	se as many she	ets as	necessary)	Examiner Name		
SI	heet	9	of	13	Attorney Docket Number	2738-21	

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
AHT	C45	MURPHY, AAMODT, Spicer and Royce (eds) Photoacoustic and Photothermal Phenomena II, 1990, vol. 62, Springer-Verlag, Berlin Heidelberg, Germany.	
	C46	NAGY-UNGVARAI, Z. and HESS, BENNO "Control of Dynamic Pattern Formation in the Belous-ov-Zhabotinsky Reaction" Physica D (1991) North-Holland.	
	C47	NICOLIS, G and BARAS, F (eds.), Chemical Instabilities, 1984, D.Reidel Publishing, Dordrecht/Bos-ton/Lancaster.	
	C48	NICOLIS, G., "Nonlinear Phenomena in Chemistry", Introduction to Nonlinear Science, 1995, Cambridge University Press, Great Britain.	
	C49	Omnichord OM-250m, Suzuki, Box 261030, San Diego, CA 92196, USA.	
	C50	ORBAN, M., KURIN-CSORGEI, K., ZHABOTINSKY, A, and EPSTEIN, I, "New Indicators for Visualizing Pattern Formation in Uncatalyzed Bromate Oscillatory Systems", J. Am. Chem. Soc. 1998, Vol. 120, pp. 1146-1150.	
	C51	PC-1600 Midi Controller, Peavy Corporation, 711 A St., Meridan, MS 39302-2898, USA.	
	C52	PENNYWITT, KIRK "Robotic Tactile Sensing," Byte, Jan., 1986.	
	C53	PLM 8128E, Peavey, Corporation, 711 A St., Meridan, MS 39302-2898, USA.	
V	C54	PMC10 Program. MIDI Foot Controller, Digitech, Salt Lake City, UT, USA.	
MI	C55	Review of KORG X-230 Drum (later called "Wave Drum"), Electronic Musician, Apr. 1994.	

Examiner Signature	Date Considered	10/27/04	

EXAMINER: Initial interest reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

	Substitute	for form 1449	A/PTO		Compl te if Known			
		D14 4 T14	AN DIG	OL COURT	Application Number			
				CLOSURE	Filing Date	September 30, 2003		
	STAT	TEMENT	ΓBY A	PPLICANT	First Named Inventor	Lester F. Ludwig		
					Group Art Unit			
(use as many sheets as necessary)					Examiner Name	T		
abla	Sheet	10	of	13	Attorney Docket Number	2738-21		

OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS							
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issu number(s), publisher, city and/or country where published.					
AH	C56	RICH, ROBERT "Buchla Lightning MIDI Controller", Electronic Musician, Oct. 1991.					
	C57	RICH, ROBERT "Buchla Thunder", Electronic Musician, Aug. 1990.					
	C58	ROADS, C., "A Tutorial on Non-linear Distortion or Waveshaping Synthesis," Computer Music Journal, Vol. 3, No. 2, pp. 29-34, June 1979, People's Computer Company, Menlo Park, CA, USA.					
	C59	Robotic Tactile Sensig, Kirk Pennywitt, BYTE, Jan. 1986.					
	C60	Roland's COSM: A Whole New World of Sounds, Kikumoto/Meyer, Roland Users' Magazine. 7200 Dominion Circle, Los Angeles , CA, 90040-3696, USA.					
	C61	RONSE, CHRISTIAN and DEVIJVER, PIERRE A., Connected Components in Binary Images: the Detection Problem, 1984, Research Studies Press/ John Wiley & Sons Inc., New York, NY, USA.					
	C62	RSP-550 Algorithm Guide, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.					
	C63	RSP-550 Owners Manual,Roland Corporation, 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.					
	C64	RUOFF, P. "How Bromate Oscillators Are Controlled", Arn. Chem. Society, 1988.					
V	C65	Sentient Six digital guitar interface, PASSAC, Milpitas, CA 95035, USA.					
MI	C66	SGE MACH II, Applied Research and Technology, 215 Tremont St., Rochester, NY 14608, USA.					

Examiner Signature	Alteho	Date Considered	10/27/04	
·				

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw/line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



¹ Unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

Substitu	te for form 1449A/PT)		Complete if Known		
18157	STAR A TION	DIC	OLOCUPE	Application Number		
			CLOSURE	Filing Date	September 30, 2003	
STA	TEMENT B	YA	PPLICANT	First Named Inventor	Lester F. Ludwig	
				Group Art Unit		
	(use as many she	eets es	necessary)	Examiner Name		
Sheet	11	of	13	Attorney Docket Number	2738-21	

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
MA	C67	SHAPIRO, LARRY S, Affine Analysis of Image Sequences, 1995, Press Syndicate of the Cambridge University Press.	
1	C68	SLAWSON, WAYNE, Sound Color, 1985, University of California Press, Berkeley, CA, USA.	
	C69	SNELL, JOHN M. "Sensors for Playing Computer Music with Expression", Proceedings of the Intl. Computer Music Conf. at Eastman, 1983.	
	C70	Switchblade 16, Sound Sculpture, 5741 Arapahoe Rd. Ste. 2a Boulder, CO 80303, USA.	
	C71	Synthophone, Softwwind Instruments, 304 Newbury St. Ste. 323, Boston, MA 02155, USA.	
	C72	Tactile sensors and the gripping challenge, IEEE Spectrum Aug. 1985.	
	C73	The Fretless Wizard, Biaxe, P.O. Box 15426, Stamford, CT, 06901-0426, USA.	
	C74	Trilogy, Hipshot Music Prods. Van Nuys, NY, USA.	
	C75	TYSON, JOHN J., The Belousov-Zhabotinskii Reaction, Springer-Verlag, Berlin/Heldelberg, Germany.	
. V	C76	Unlocking the Secrets of HRM (Harmonic Restructure Modeling), Craig Anderton, Roland Users' Magazine. 7200 Dominion Circle, Los Angeles, CA 90040-3696, USA.	
YHI	C77	Various 6D Tracking Products, Ascension Technology Corporation, PO Box 527, Burlingame, VT 05402, USA.	

Examiner Date Signature Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw tine through citation if not in conformance and not considered, include copy of this form with next communication to applicant.

¹ Unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

	Substitute	for form 1449	A/PTO		Complete if Known			
	NIE O	DAGATI	0N DI	SOL OCUDE	Application Number	1		
				SCLOSURE	Filing Date	September 30, 2003		
	STAT	EMEN	T BY A	PPLICANT	First Named Inventor	Lester F. Ludwig		
					Group Art Unit			
(use as many sheets as necessary)				s necessary)	Examiner Name			
$\overline{}$	Sheet	12	of	13	Attorney Docket Number	2738-21		

OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS						
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²			
HA	C78	VERNER, J. Artif Starr Switch Company Ztar 624-D, Electronic Musician, Nov. 1994.				
	C79	VG-8 Users Manual, Roland Corporation, 7200 Dominion Circle, Los Angeles, CA, 90040-3696, USA.				
	C80	VIBERG, MATS, Subspace Fitting Concepts in Sensor Array Processing, Linkoping Studies in Science and Technology, 1989, Dissertations No. 27 Linkoping, Sweden.				
	C81	VISINTIN, A. (ed.), Models of Hysteresis, Longman Scientific & Technical, 1993, Harlow, En-gland.				
	C82	WANG, X-J, and NICOLIS, G. "Bifurcation Phenomena in Coupled Chemical Oscillators: Normal Form Analysis and Numerical Simulations", Physica 26D (1987), pp. 140-155, North-Holland, Amsterdam.				
	C83	WESSEL, C., "A Tuturial on Non-linear Distribution or Waveshaping Synthesis", Computer Music Journal, Jun. 1979, Vol. 3, No. 2, pp. 29-34, People's Computer Company, Menlo Park, CA., USA.				
	C84	WILKINSON, SCOTT "SynchroVoice MidiVox" Electronic Musician, Jul. 1992.				
	C85	WINCKEL and FRITZ, Music Sound, and Sensation: A Modern Exposition, 1967, Dover, New York, USA.				
	C86	Wind Machine, Anatek, Creation Technologies, 400 Brooksbank Ave. B.C. Canada V7J-1G9				
	C87	WX11 and Wt11, Yamaha, 6600 Orangethorpe Ave., Box 6600, Buena Park, CA, USA.				
MA	C88	XSDR AI2 Synthesizer Module, KORG, Suginamiku, Tokyo, Japan.				

Examiner Signature	Mhy	In A	Holm	Date Considered	10/21/04	
	////	7 7 7 7 7				

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Fraw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



¹ Unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

	Substitute	e for form 1449	A/PTO		Complete if Known		
	INICO		AN DIC	OL OCUPE	Application Number		
INFORMATION DISCLOSURE					Filing Date	September 30, 2003	
STATEMENT BY APPLICANT					First Named Inventor	Lester F. Ludwig	_
					Group Art Unit		
(use as many sheets as necessary)				necessary)	Examiner Name	1	
\	Sheet	13	of	13	Attorney Docket Number	2738-21	

	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS					
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²			
Alf.	C89	Yamaha FS1R, Electronic Musician, Dec., 1998.				
111	C90	Yamaha WX11 and WT11, Midi Magazine Mar./Apr. 1994.Yamaha Corp. of America, 6600 Orangethorpe Ave., PO Box 6600 Buena Park, CA 90622-6600, 714 522-9011.				
MIS	C91	ZTAR Midi Fingerboard Controllers-Starr Instruments/Starr Switch, 1717 Fifth Ave., San Diego, CA 92101, USA.				
			 			
	<u> </u>					
L	 _		<u> </u>			
Examiner Signature	1 0//	Date Considered 10/21/04				

EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 809. Draw line phrough citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.